



## On-Track/Early Warning Systems

### DROPOUT PREVENTION FRAMEWORK RESEARCH SYNTHESIS

On-Track/Early Warning Systems (EWS) allow educators to regularly review data to identify students showing signs of being at risk of dropping out of high school or not meeting post-high school outcomes, understand what leads to elevated signs of risk, and provide targeted supports to students. EWS uses local and historical data that respond to research-based indicators, along with other data sources and insights from people (including students), to help understand underlying student needs.

Most EWS rely on three indicators that research has shown are most predictive of risk for not graduating:

- **Attendance:** In middle school: missing nine days/quarter (or 36 days/year). In high school: missing 10% of instructional time.
- **Behavior:** Two or more mild or more serious behavior infractions.
- **Course Performance:** In grades 6–8: failure in English or math; a grade point average of less than 2.0. In grades 9–12: any course failure; failure to pass grade 9.

Districts and schools using EWS may also expand on these indicators to include social-emotional learning or whole child measures, such as student belonging or connectedness, or specific benchmarks toward postsecondary readiness, such as participation in an internship or advanced coursework. The real power of an EWS is the ability to proactively act on these predictive data to match interventions to needs so students can get back on track or stay on track for on-time graduation and postsecondary readiness.

The use of EWS supports dropout prevention and student engagement efforts in a number of ways:

- Monitoring student data through early warning indicator data consistently identifies students showing signs of risk for not graduating on time (McKee & Caldarella, 2016; Balfanz et al., 2007; Faria et al., 2017).
- Reviewing early warning indicator data regularly to intervene quickly can offer support to students before more intensive recovery efforts are needed (Lovelace et al., 2017; Corrin et al., 2016).
- Using indicators in attendance, course performance, and behavior is more predictive of student outcomes than demographics, socio-economic status, and other environmental factors historically used to identify students (Baker et al., 2019).

### Colorado Dropout Prevention Framework

The Colorado Dropout Prevention Framework was updated in 2023 to include five foundational practices and four strategies that support school and district efforts to decrease dropout rates and increase student engagement in learning, credit attainment, postsecondary preparation, and graduation rates.

#### Foundational Practices

- Connected Relationships and Culture
- Strong Family and Community Relationships
- Relevant and Engaging Learning Opportunities
- Data-Based Decision Making
- Aligned Policies and Practices to Build Coherence

#### Strategies

- On-Track/Early Warning Systems
- Multiple Pathways to Graduation
- Counseling the Whole Child
- Persistence, Recovery and Reengagement

To learn more about the resources available to support dropout prevention efforts, visit the [Office of Dropout Prevention and Student Re-Engagement](#).



## Research Overview

Early studies (2015–2019) regarding EWS primarily focused on the importance of using attendance, behavior, and course performance as indicators of students being at risk of not graduating from high school on time. A 2015 REL Northwest study of four districts in Oregon found that grade point average (GPA) and attendance in Grades 8 and 9 were valuable early warning signals to predict indicators of on-time graduation. These early indicators were especially important for males and English language learners because these groups of students were found to have the lowest graduation rates (Burke, 2015). Research continues to show that English language learners had higher dropout rates and lower graduation rates than non-English learners. In addition, typical early indicators (attendance, GPA) are not as accurate for English language learners as for other students (Deussen et al., 2017). These findings point to the importance of using multiple measures and strategies to support a range of students. Over time, efforts such as the Early Warning Intervention and Monitoring System (EWIMS) showed significant impacts on getting students back on track to graduation (Faria et al., 2017). In this study, EWIMS was used to support at-risk students at 73 randomly assigned high schools. EWIMS reduced the rate of chronic absence and course failure demonstrated by students.

Recent studies (2019–2023) continue to support the use of EWS to reduce chronic absenteeism and other factors that influence dropout rates. Indicators such as attendance rates, behavior data and course performance (ABCs) can be seen as early as the sixth grade. According to Balfanz and Byrnes (2019), chronic absenteeism is the strongest early indicator of a connection between behaviors in elementary school and the later risk for dropout. The researchers state “early chronic absenteeism both leads to lower academic performance in elementary school and a greater likelihood of being chronically absent in the middle grades” (p. 53). Bruch et al. (2020) studied grades K–12 public schools to develop a way to predict academic problems. In this study, academic problems were found to be absenteeism, suspension, poor grades, and low performance on state tests. These researchers found that “students with prior academic problems, social services involvement, and justice system involvement have higher rates of academic problems in the following months” (p. 6), leading to risk of dropout.

*Early Warning Intervention and Monitoring Systems reduced the rate of chronic absence and course failure (Faria et al., 2017).*

Research conducted in recent years focuses more on attendance and behaviors than academic indicators. A study of Oregon school districts found positive impacts of Early Indicator and Intervention Systems on chronic absenteeism (Sepanik et al., 2021). An evaluation of an early chronic absenteeism intervention program showed that the program lowered the percentage of students that were absent 21 or more days from 13.42% in the 2013–14 academic school year to 5.00% in the 2018–19 academic school year (Bundshuh et al., 2021). Another recent study reflects the importance of collecting and monitoring behavior data. The Adolescent Behavior Index (ABI) includes student self-reported perceptions of school climate and is linked to “behavioral engagement leading to positive college and career readiness outcomes.” In addition, ABI includes GPA, discipline, attendance, and tardiness. EWS can be particularly helpful for early interventions with special populations—students with disabilities were found to have lower ABI scores (Rifenbark et al., 2023). In addition, Clemens et al. (2019) found that routinely collected child welfare and education administrative data may be used to predict dropout risk for youth with a history of foster care, and to design early interventions to support such students.

Visit the Regional Educational Laboratories [Learning Series on Early Warning Systems](#) to access additional studies, implementation tools and resources, videos and infographics focused on the development and use of EWS.

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